

Abstract

Trench capacitor with isolation collar and corresponding method of production

The present invention provides a trench capacitor, in particular for use in a semiconductor memory cell, with a trench (2), which is formed in a semiconductor substrate (1); a first and second conducting capacitor plate (60, 80; 60, 100; 100'', 100'''), located in the trench (2); a dielectric layer (70), located between the first and second capacitor plates (60, 80; 60, 100; 100'', 100'''), as the capacitor dielectric; an isolation collar (5'') in the upper region of the trench (2); and an optional conducting filling material (80, 80'), filled into the trench (2). The dielectric layer (70) has been applied by an ALD or ALCVD method or a CVD method. The invention likewise provides a corresponding method of production.

Figure 1n

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